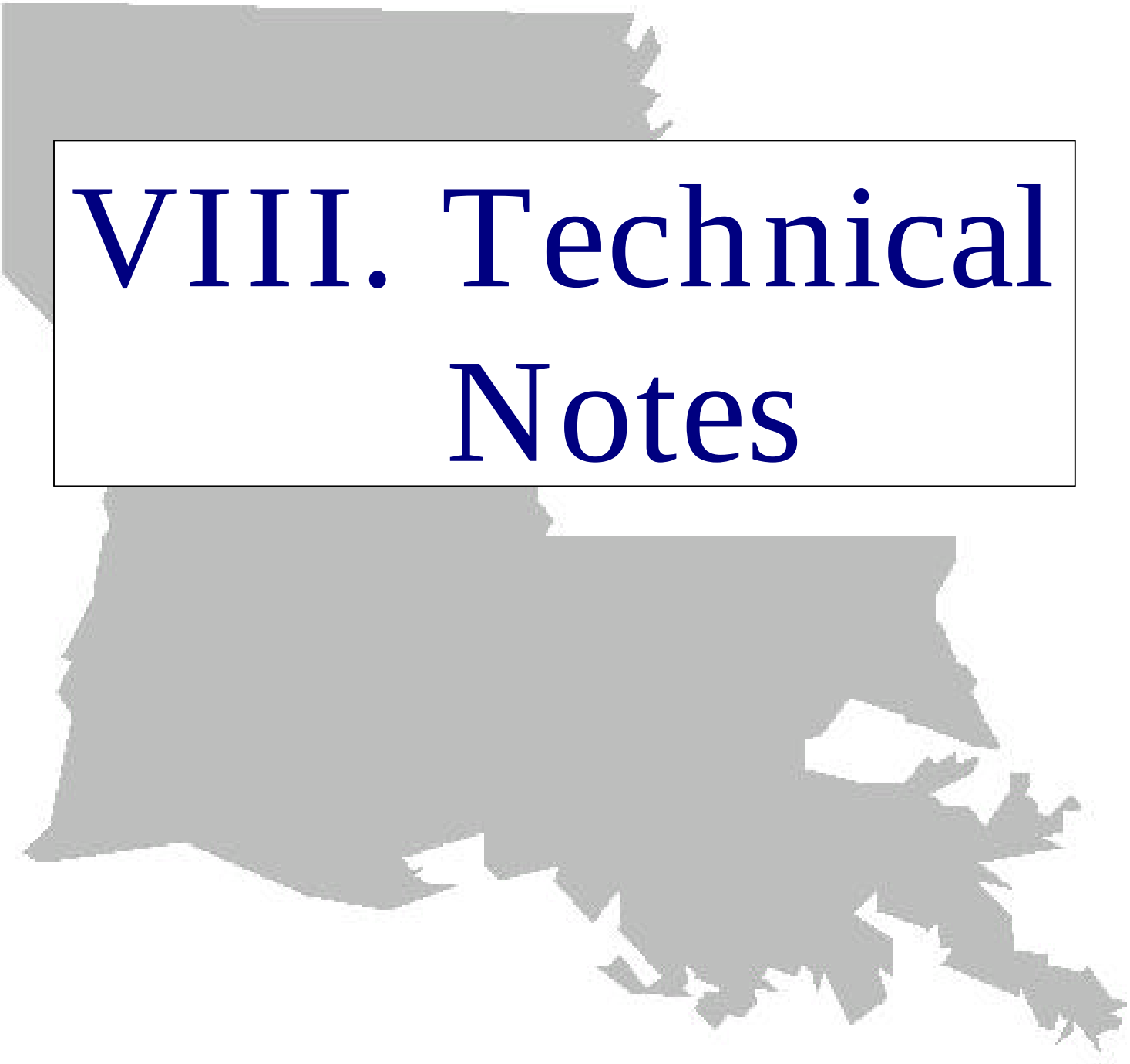

VIII. Technical Notes

DATA SOURCES, COMPLETENESS, AND IMPUTATIONS

Sources of Data

Louisiana law requires that certificates of vital events be submitted to the Department of Health and Hospitals, Office of Public Health. Within the Office of Public Health, the Vital Records program is charged with the responsibility of recording and preserving the submitted documents. The State Center for Health Statistics is assigned the tasks of tabulating, summarizing, analyzing, and disseminating statistical information recorded on vital certificates.

The statistics presented in this report were obtained primarily from certificates registered with the Vital Records Registry Program in the Division of Health Information, but there are many exceptions to this rule. Records of vital events occurring outside the State to residents of Louisiana were obtained from transcripts of certificates made available through a nationwide system of interchange among all states and territories.

Unless otherwise noted, Louisiana data were summarized by the State Center for Health Statistics. United States data and data for other states were taken from publications of the National Center for Health Statistics. Data sources other than the State Center for Health Statistics are footnoted wherever they appear in this report.

Completeness of Data

Births: Matching of infant death certificates with the corresponding birth certificates indicates that birth registration in Louisiana is approximately 97 percent complete. This figure is considered to be an underestimate of completed certificates, since it is believed that some certificates which actually have been filed were not located during the matching process (due to differences in key variables on the birth and death certificates). Underregistration of births for infants who die shortly after they are born is also probable.

Deaths: Death registration is considered to be close to 100 percent complete, as it is necessary to file a death certificate before a burial permit is issued in Louisiana. However, it is recognized that some under-registration does occur for infants dying shortly after birth.

Spontaneous Fetal Deaths: The degree of registration completeness for stillbirths (spontaneous fetal deaths) is not known, but some under-registration is likely, especially for stillbirths near 20 weeks gestation.

Induced Termination of Pregnancy: The Vital Records Registry receives certificates on most abortions, but the information recorded on the filed certificates often is incomplete. In addition, although some states notify Louisiana of abortions obtained by Louisiana residents, Louisiana cannot reciprocate. A federal court decision prohibits the collection of residency information on women who terminate pregnancies within the state. Hence, no accurate count of the number of terminations among Louisiana residents is available.

Marriage: Marriage certificates are filed with the Vital Records Registry for at least 95 percent of marriages occurring in the state annually.

Divorce: Louisiana divorce statistics are incomplete. Each year, approximately 25% of the parishes in the state fail to report divorce information to the Vital Records Registry. The divorce tabulations included in this report reflect counts made by the Clerks of Courts as well as data derived from actual certificates received in the central office. Because of underreporting, Louisiana is excluded from the national divorce registration system.

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Missing Data

Tables and figures that present state-level data exclude records that are missing the information being described.

In the Parish Tables, however, data values have been imputed when the following data items are missing:

1. "Sex" is allocated male or female depending on whether the last digit of the record identification number is even or odd, except in the case of death where the underlying cause is sex specific.

2. "Race" is allocated depending on the last digit of the record identification number, giving a 70 percent chance for white and 30 percent chance for black.

3. "Parish of Residence" is assumed to be "Parish of Occurrence" when residence parish is missing for live births and for infants dying under 1 year of age.

Parish Tables

Parish tables included in this report contain data for Louisiana's 64 parishes and for the major cities within each parish. Data entries for major cities are listed below the parish entries. Cities are labeled with an asterisk (*) following the city name.

All crude rates included in the parish tables have been calculated using intercensal population estimates provided by the Research Division, College of Administration and Business of the Louisiana Tech University. All age-adjusted rates included in the *Deaths* section of this report have been calculated using U.S. Census intercensal population estimates and the 1940 U.S. Standard population.

Place of Residence vs. Place of Occurrence

Vital events are classified by Place of Residence or by Place of Occurrence. Place of Residence is defined as the residence of the deceased for a death and as the residence of the mother for a birth or stillbirth. Place of Occurrence is defined as the geographic location where the event occurred. All tables refer to resident events except as noted.

Cities Located in Two Parishes

The following cities span parish boundaries:

1. Bossier City – Primarily in Bossier Parish, partly in Caddo Parish.

2. Shreveport – Primarily in Caddo Parish, partly in Bossier Parish.

3. Eunice – Primarily in St. Landry Parish, partly in Acadia Parish.

4. De Ridder – Primarily in Beauregard Parish, partly in Vernon Parish.

In this report, the city is reported as a single entity in the primary parish, and all events are allocated to that city. However, at the parish level the event is allocated to the actual parish. As an illustration, if a birth occurs in the portion of Shreveport which falls in Bossier Parish, it is reported in the Shreveport city count printed below Caddo Parish, but is not included in the Caddo Parish birth count. It is, instead, included in the Bossier Parish birth count. There is a possibility that this reallocation may show more events in a city than in the parish where the city is primarily located.

Comparability of National and State Data

Numbers and rates published in state tables by the National Center for Health Statistics (NCHS) may vary slightly from data published by Louisiana's State Center for Health Statistics due to differences in editing of the data.

Technical Notes

Technical Notes

POPULATION DATA

Intercensal population estimates provided by the United State Bureau of the Census were used to calculate most state-level rates for demographic subgroups (race, gender, age). 1998 population files released on September 15, 1999, were downloaded from the U.S. Census population estimates website, which currently is located at www.census.gov/population/www/estimates/popest.html.

Intercensal population estimates for 1998, provided by the Research Division, College of Administration and Business of the Louisiana Tech University, were used to calculate crude rates presented in parish tables, including state rates.

BIRTH DATA

Technical Notes

Race

Prior to 1989, the race reported in birth data tables was the inferred race of the child. Beginning in 1989, birth data is presented by race of mother.

Place of Residence

Place of Residence is defined as the residence of the mother for a birth or stillbirth.

Adequate Prenatal Care (modified Kessner Index definition):

1. Care must begin in the first trimester
2. The number of required prenatal visits varies with gestation age.
   - 17 weeks gestation require 2 or more visits
   - 18-21 weeks gestation require 3 or more visits
   - 22-25 weeks gestation require 4 or more visits
   - 26-29 weeks gestation require 5 or more visits
   - 30-31 weeks gestation require 6 or more visits
   - 32-33 weeks gestation require 7 or more visits
   - 34-35 weeks gestation require 8 or more visits
   - 36 weeks gestation require 9 or more visits

Weight Equivalents

Equivalents of the grams weight in terms of pounds and ounces are shown:

453.6 grams = 1 pound
Under 500 grams = 1 pound 1 ounce or less
500-999 grams = 1 pound 2 ounces - 2 pounds 3 ounces
1000-1499 grams = 2 pounds 4 ounces - 3 pounds 4 ounces
1500-1999 grams = 3 pounds 5 ounces - 4 pounds 6 ounce
2000-2499 grams = 4 pounds 7 ounces - 5 pounds 8 ounces
2500-2999 grams = 5 pounds 9 ounces - 6 pounds 9 ounces
3000-3499 grams = 6 pounds 10 ounces - 7 pounds 11 ounces
3500-3999 grams = 7 pounds 12 ounces - 8 pounds 13 ounces
4000-4499 grams = 8 pounds 14 ounces - 9 pounds 14 ounces
4500-4999 grams = 9 pounds 15 ounces - 11 pounds 0 ounces
5000 grams or > = 11 pounds 1 ounce or more

Teen Birth Rates

Birth counts used to calculate teen birth rates for the age group 10-14 include all births to mothers under 15 years of age. The population base used to calculate the rates is the respective female population ages 10 to 14 years.

Technical Notes

DEATH DATA

Place of Residence

Place of Residence is defined as the residence of the deceased for a death and as the residence of the mother for a stillbirth.

Cause of Death Coding

Classification System: World Health Organization regulations specify that member nations classify cause-of-death in accordance with the current revision of the International Statistical Classification of Diseases, Injuries, and Causes of Death (ICD). The ICD has been revised approximately every ten years since 1900. The current revision, ICD-9, has been used for deaths occurring since January 1, 1979.

Underlying Causes: Prior to 1949, under the first five revisions of the International Classification, causes of death were coded on the basis of priority tables for multiple causes as set forth in *The Manual for Joint Causes of Death*. Under the sixth through the ninth (current) revisions, the cause of death coded for tabulating death data is the "underlying cause" as determined from information provided on the death certificate by the attending physician or coroner. Currently, when more than one cause of death exists, the causes are ordered according to the Automated Classification of Medical Entities (ACME) system. ACME is a computerized program that evaluates both the ICD-9 code characteristics and the components of the death history recorded on the certificate, to determine the primary, or “underlying”, cause of death.

The "underlying cause" may be defined as (a) the disease or injury that initiated the train of morbid events leading directly to death or (b) the circumstances or accident or violence that produced the fatal injury. Under the last four revisions, death resulting from accident or violence may be classified by nature of injury or by external cause of injury, but it has been standard procedure to code such deaths according to the latter classification scheme for mortality statistics.

Comparability of statistics: The decennial revisions of the International Classification of Diseases (ICD) have led to repeated breaks in the comparability of cause-of-death data. The introduction of the present concepts of classification in the sixth revision seriously affected the interpretation of mortality trends before and after 1949. Comparability ratios were subsequently computed by the United States to assist in the analysis of mortality trends by providing a measure of the degree of discontinuity. Following the recommendations of the International Conference for the Sixth Revision of the ICD, the United States used a dual coding method for constructing these comparability ratios after the introduction of each of the last four revisions.

For a more detailed description of the construction of the ratios and a brief summary of statistical design, see *Estimates of Selected Comparability Ratios Based on Dual Coding of 1976 Death Certificates by the Eighth and Ninth Revision of the International Classification of Disease*, Monthly Vital Statistics Report, DHEW Publication No. (PHS) 80-1120 Volume 28, No. 11, (Supplement) Hyattsville, MD, National Center for Health Statistics, February 1980.

Cause of Death Ranking: Cause of death rankings are based on the "List of 72 Selected Causes of Death" developed by the National Center for Health Statistics. This list was adapted from a basic list recommended by the World Health Organization for use with the Ninth Revision of the ICD. The categories, "Major Cardiovascular Diseases" and "Symptoms, Signs, and Ill-defined Conditions" are not ranked. In addition, categories that begin with the words "Other" or "All Other" are not ranked. To determine the leading causes of death, the remaining categories are ranked according to the number of deaths that occur in the calendar year. When a category that represents a subtotal is ranked (e.g."tuberculosis"), its component parts (for example, "Tuberculosis of the Respiratory System" and "Other Tuberculosis") are not ranked.

Codes Used for Cause of Death Ranking: The following categories of morbidity and mortality as they appear in this report are represented by these corresponding ICD-9 codes:

ICD-9 Codes	**Disease Category**
390-448	Cardiovascular Disease
390-398, 402, 404-429	Diseases of the Heart
140-208	Malignant Neoplasms
430-438	Cerebrovascular Disease
800-949	Accidents and Adverse Effects
250	Diabetes Mellitus
490-496	Chronic Obstructive Pulmonary Disease & Allied Conditions
480-487	Pneumonia and Influenza
960-978	Homicide and Legal Intervention
042-044	AIDS
038	Septicemia
950-959	Suicide and Self-inflicted Injury
580-589	Nephritis, Nephrotic Syndrome, and Nephrosis
571	Chronic Liver Disease and Cirrhosis
760-779	Certain Conditions Originating in the Perinatal Period
440	Atherosclerosis
740-759	Congenital Anomalies

Technical Notes

DEFINITIONS

The following is a glossary of technical terms used in this report:

AGE-ADJUSTED DEATH RATE: a rate calculated to adjust for differences in the distribution of ages in separate populations. The distribution of ages in a population can increase or decrease the likelihood of death in that population. When comparing mortality data from different populations, rates adjusted for differences in age distribution are used because age is the most significant characteristic related to disease and death. Age-adjusted death rates are artificial numbers, designed to be used only for comparisons of different populations. Unlike crude death rates, age-adjusted rates do not measure true rates of death in a population. They should not be compared directly to crude death rates.

BIRTH RATE (CRUDE BIRTH RATE): a measure of the number of live births in a population during a given period of time. Birth rates are calculated by dividing the number of live births occurring in a given population during one year by the estimated population, then multiplying the quotient by 1,000. Rates are expressed as the number of live births per 1,000 population. Birth rates are affected by the number and age distribution of women of childbearing age. Because crude birth rates relate the number of live births to the total population in an area, without regard to the age or sex distribution of the population, they are useful in projecting population changes in the area.

COVENANT MARRIAGE: a marriage in which the couple agrees to complete premarital counseling from a clergyman of a religious sect or a marriage counselor and signs a notarized affidavit to the effect that the counselor has discussed with them the commitment to the marriage for life, the obligation to seek marital counseling if problems arise in the marriage, and the exclusive grounds for legal separation or divorce. These grounds include adultery by the other spouse; commission of a felony by the other spouse and sentence of imprisonment at hard labor or death; abandonment by the other spouse for one year; physical or sexual abuse of a spouse or of a child of either spouse; living separate and apart for two years; or habitual intemperance, cruel treatment, or severe ill treatment by the other spouse. The waiting period for divorce after legal separation is one year and six months if there is a minor child(ren) of the marriage, and one year in all other cases.

DEATH RATE (CRUDE DEATH RATE): a measure of the number of deaths in a population during a given period of time. Death rates are calculated by dividing the number of deaths occurring in a given population during one year by the estimated population, then multiplying the quotient by 100,000. The rate is expressed as the number of deaths per 100,000 population. Crude death rates are useful for examining actual mortality in a geographic area or population because they describe the rate at which deaths occur in the total population, without regard to subpopulation differences in factors (such as age) which influence death.

FETAL DEATH: death prior to the complete expulsion or extraction from its mother of a product of human conception which, after such expulsion or extraction, never breathes or shows any other evidence of life. (The term "fetal death" was defined on an all-inclusive basis to end confusion arising from use of such terms as stillbirth, abortion, and miscarriage.)

FETAL MORTALITY RATE: a measure of fetal deaths occurring in a population during a given period of time. Fetal mortality rates are calculated by dividing the number of fetal deaths in a given population during a given time period by the number of live births plus fetal deaths occurring in the population during the same time period, then multiplying the quotient by 1,000. Fetal mortality rates are expressed as the number of fetal deaths per 1,000 live births plus fetal deaths.

GESTATIONAL AGE-Birth data: the interval between the first day of the mother's last normal menstrual period and the date of birth. Physicians use several different methods to estimate gestational age, including computing the interval between the first day of the mother's last normal menstrual period (LMP) and the date of birth, or determining a clinical estimate based on examination of the newborn. Standardized methods of measurement for determination of gestational age are difficult, especially among pregnancies in which minimal or no prenatal ascertainments are made. Louisiana Birth Certificates record both the "Date Last Normal Menses Began" and the Clinical Estimate of Gestation." LMP is subject to error from imperfect maternal recall or misidentification of the last normal menstrual period because of postconception bleeding, delayed ovulation, or intervening early miscarriage. Therefore, the physician's clinical estimate of gestation is used to determine gestational age in this report.

GESTATIONAL AGE-Fetal Death data: the interval between the first day of the mother's last normal menstrual period and the date of delivery. Prior to 1995, "Clinical Estimate of Gestation" was not recorded on Louisiana's Fetal Death Certificate. Consequently, gestational ages reported for years prior to 1995 were calculated by subtracting the "Date Last Normal Menses Began" from the "Date of Delivery," as recorded on the Fetal Death Certificate. Beginning with the *1997 Louisiana Vital Statistics Report*, gestational ages reported for Louisiana fetal deaths occurring in 1995 or later are derived using the National Center for Health Statistics formula for calculation of gestational age for fetal deaths. This formula calculates gestational age by combining information collected in the "Date Last Normal Menses Began" and "Clinical Estimate of Gestation" sections of the Fetal Death Certificate.

HEBDOMADAL DEATH: a representation of deaths occurring to children under 7 days of age. See *PERINATAL MORTALITY*.

HEBDOMADAL MORTALITY RATE: a measure of deaths to infants under 7 days of age during a given period of time. Hebdomadal mortality rates are calculated by dividing the number of deaths to infants under 7 days of age occurring in a given population during one year by the number of live births occurring during that year, then multiplying the quotient by 1,000. The rate is expressed as the number of deaths to infants under age 7 days, per 1,000 live births.

INDUCED TERMINATION OF PREGNANCY (INDUCED ABORTION): the purposeful interruption of pregnancy with the intention other than to produce a liveborn infant or to remove a dead fetus, and which does not result in a live birth.

INFANT MORTALITY: a representation of deaths occurring in the first year of life. Most infant deaths are preventable. The risk of infant death is increased by giving birth at a very young age (<19 years) or older age (>40 years), leaving less than 2 years between births, or giving birth under conditions of poor maternal health or poor nutrition. Chemical toxins such as alcohol, drugs and tobacco smoke also increase the risk. Most of these factors are associated with low birth weight. A newborn might be low birthweight because he/she has been compromised by one of the factors noted above, or simply because he/she was born too soon ("prematurely"). After the first month of life, poor infant nutrition, poor hygiene, and infectious disease all increase the risk of infant mortality.

INFANT MORTALITY RATE: a measure of deaths to infants under 1 year of age during a given period of time. Infant mortality rates are calculated by dividing the number of deaths to infants under 1 year of age occurring in a given population during one year by the number of live births occurring during that year, then multiplying the quotient by 1,000. The rate is expressed as the number of infant deaths per 1,000 live births.

LIVE BIRTH: a birth that shows any sign of life after delivery, irrespective of the duration of pregnancy. Sign of life is considered the breathing or showing any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or the definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.

Technical Notes

LOW BIRTHWEIGHT: a live birth weighing less than 2,500 grams (5 pounds 8 ounces). The percent low birthweight is the number of these births in a population during a given time interval divided by the total number of live births with known birthweight that were reported in that population during the same time interval. Low birthweight can result from a shortened gestational period and is often linked to preventable factors such as lack of prenatal care, maternal smoking, use of alcohol and other drugs, and pregnancy before the age of 18 years. Other risk factors for low birthweight include low socioeconomic level, low maternal weight gain, low pregnancy weight, first births, female sex, short maternal stature, prior low birthweight births, maternal illness, fetal infection, and a variety of metabolic and genetic disorders. Low birthweight infants are more likely than normal weight infants to have brain damage, lung and liver disease, subnormal growth, developmental problems, mild learning disorders, attention disorders, and developmental impairments. *See VERY LOW BIRTHWEIGHT.*

MARRIAGE RATE: a measure of marriages occurring in a population during a given period of time. Marriage rates are calculated by dividing the number of marriages occurring in a given population during one year by the estimated population, then multiplying the quotient by 1,000. The rate is expressed as the number of marriages per 1,000 population. The marriage rate would be more representative of resident marriages if it were calculated using the number of marriages to *residents* of an area, rather than the number of marriages *occurring* in an area. Marriage counts by residence of bride and groom are difficult to quantify, however, because couples often choose to obtain marriage licenses and/or to marry outside their areas of residence.

MODIFIED KESSNER INDEX: the method used in Louisiana to measure adequacy of prenatal care. This index defines prenatal care as adequate if the first prenatal visit occurred in the first trimester of pregnancy, and if the total number of visits was appropriate to the gestational age of the baby at birth. However, because these measures assess neither the quality nor the content of prenatal care, they must be recognized only as estimates of the adequacy of prenatal care. For detail of the modified Kessner Index, please refer to the “Birth Data” section in the TECHNICAL NOTES chapter.

MORTALITY: a representation of the incidence of death. Most deaths result from a few major causes. In Louisiana, as well as the nation, the top four causes include heart disease, cancer, stroke and obstructive lung disease. Many of us have the genetic potential to live to age 85 years, and some have the potential to live well beyond that age. Despite this potential, the average age at death in the United States is between 65 and 79 years. Many of the leading causes of death for people between the ages of 25 and 65 are preventable, wholly or in part, through changes in lifestyle. Cause of death data is readily available from death certificates, and this information can be used to identify areas where behavioral changes may be most effective in increasing length of life. Leading causes of death such as heart disease, cancer, unintentional injuries, stroke and liver disease all have been associated with risk factors related to lifestyle.

NEONATAL MORTALITY: a representation of infant deaths occurring during the first 28 days of life. Deaths during this period are generally due to hereditary factors and factors affecting the mother before and during pregnancy. Three-quarters of these deaths are associated with low birthweight. The distinction between neonatal and postneonatal mortality has been blurred in recent years because of increased survival of premature infants due to advances in neonatology.

NEONATAL MORTALITY RATE: a measure of deaths occurring to infants under 28 days of age during a given period of time. Neonatal mortality rates are calculated by dividing the number of deaths occurring to infants under 28 days of age in a given population during one year by the number of live births occurring during that year, then multiplying the quotient by 1,000. The rate is expressed as the number of deaths to infants under age 28 days, per 1,000 live births.

PERINATAL MORTALITY: a representation of deaths of unborn fetuses after 20 weeks of gestation (stillbirths) and deaths within 7 days of birth. Perinatal mortality is influenced by

conditions that affect the mother before and during pregnancy and by health problems (genetic, chromosomal, infectious, etc.) that affect the infant.

PERINATAL MORTALITY RATE: a measure of stillbirths (fetal deaths) plus deaths to infants under 7 days of age during a given period of time. Perinatal mortality rates are calculated by dividing the number of fetal deaths plus deaths to infants under 7 days of age occurring in a given population during one year by the number of stillbirths plus live births occurring during that year, then multiplying the quotient by 1,000. The rate is expressed as the number of fetal deaths plus deaths to infants under age 7 days, per 1,000 stillbirths plus live births.

POSTNEONATAL MORTALITY: a representation of deaths occurring to infants aged 28 days through 364 days. Postneonatal mortality is influenced by environmental factors, such as nutrition, hygiene, and accidents. The distinction between neonatal and postneonatal mortality has been blurred in recent years because of increased survival of premature infants due to advances in neonatology.

POSTNEONATAL MORTALITY RATE: a measure of deaths occurring to infants aged 28 days through 364 days during a given period of time. Postneonatal mortality rates are calculated by dividing the number of deaths occurring to infants aged 28 days through 364 days in a given population during one year by the number of live births occurring during that year, then multiplying the quotient by 1,000. The rate is expressed as the number of deaths to infants aged 28 days through 364 days, per 1,000 live births

PRENATAL CARE: health care, counseling and related services provided during pregnancy to assure the best possible health for both mother and child. Care should start in the first trimester and continue throughout pregnancy. One major focus of such care is screening/monitoring to identify conditions that might threaten the mother or the child. A second major focus is counseling and guidance relative to diet, alcohol, tobacco and other health concerns. Other services, for those who qualify, are social and financial counseling, WIC, and Medicaid.

RATE: a measure used to make comparisons among different groups. A rate is the number of specific health events in a given time period divided by the population during that same time period, then multiplied by a number such as 1,000 or 100,000 to standardize the calculation so it easily can be compared with rates for other groups. Multiplying by 100 results in a percentage of events, which is the same as the number of people out of 100. Most rates, however, are given as the number out of 1,000 or 100,000, because when rates are based on very small numbers, it is easier to compare them this way. Rates can be used to measure changes in occurrence from one time period to another and to compare different geographical areas.

RESIDENCE: defined as that of the deceased for a death and as that of the mother for a birth or stillbirth. Births and deaths occurring in institutions in Louisiana are reallocated to the place of previous residence regardless of length of stay in the institution. All tables in this publication refer to resident events except as noted.

RACE: that category which is shown on the certificate. Tables that include race classification are tabulated by white, black and other, where other includes all races not white or black. Beginning in 1989, birth data is presented by race of mother rather than inferred race of child.

SPONTANEOUS FETAL DEATH: a fetal death that is not an induced termination of pregnancy. Spontaneous fetal deaths of 20 weeks or more duration of pregnancy, or with a weight of 350 grams or more, must be reported on a Fetal Death (Stillbirth) certificate.

TEEN BIRTH: a birth to a women under the age of 20 years.

UNDERLYING CAUSE OF DEATH: the disease or injury that initiated the sequence of events leading to death.

Technical Notes

VERY LOW BIRTHWEIGHT: a live birth weighing less than 1,500 grams (3 pounds 5 ounces). The percent very low birthweight is the number of these births in a population during a given time interval, divided by the total number of live births with known birthweight that are reported in that population during the same time interval. Very low birthweight infants are at greater risk of mortality and long-term disability than higher weight infants. *See LOW BIRTHWEIGHT.*

CALCULATION OF RATES AND RATIOS

BIRTH RATE = $\dfrac{\text{number of live births}}{\text{estimated population}} \times 1{,}000$

STILLBIRTH RATIO = $\dfrac{\text{number of reportable stillbirths}}{\text{number of live births}} \times$ **1,000** (*or* **100,000,** *as specified)*

DEATH RATE = $\dfrac{\text{number of deaths}}{\text{estimated population}} \times$ **1,000** (*or* **100,000,** *as specified)*

AGE ADJUSTED DEATH RATE= (Direct Method) $\dfrac{\text{total number of expected deaths in a standard population (if the persons in this population had experienced the same age specific death rates as population being adjusted).}}{\text{total standard population}} \times$ **1,000** *(or* **100,000,** *as specified)*

INFANT MORTALITY RATE= $\dfrac{\text{number of deaths under 1 year of age}}{\text{total number of live births}} \times$ **1,000** *(or* **100,000,**

HEBDOMADAL MORTALITY RATE= $\dfrac{\text{number of deaths under 7 days of age}}{\text{total number of live births}} \times 1{,}000$

NEONATAL MORTALITY RATE= $\dfrac{\text{number of deaths under 28 days old}}{\text{total number of live births}} \times 1{,}000$

PERINATAL MORTALITY RATE= $\dfrac{\text{stillbirths + deaths under 7 days old}}{\text{total number of live births + stillbirths}} \times 1{,}000$

Technical Notes